Patent abstract files

20/69,K/5 (Item 5 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0014725585 *Drawing available*
WPI Acc no: 2005-073204/200508 bad date
XRPX Acc No: N2005-063134
Piecewise video streaming system, has interactive video client subsystem to manage user interactions and display, and streaming overlay network subsystem to stream video by streaming overlay network
Patent Assignee: RAO K K (RAOK-I); VARADARAJAN S (VARA-I); SATYAM COMPUTER SERVICES LTD (SATY-N)
Inventor: RAO K K; VARADARAJAN S

Patent Family (2 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
US 20040255323	A1	20041216	US 2003460368	A	20030613	200508	B
US 7415527	B2	20080819	US 2003460368	A	20030613	200857	E

Priority Applications (no., kind, date): US 2003460368 A 20030613

Alerting Abstract US A1
NOVELTY - The system (30) has an interactive video client subsystem for managing user interactions and display. A video on demand service subsystem manages a video request from a user for a video. The subsystem has a server interaction component for requesting a video server for the video. A streaming overlay network subsystem streams video using a streaming overlay **network** with a set of edge **nodes** and a set of core nodes.
DESCRIPTION - An INDEPENDENT CLAIM is also included for an apparatus for piecewise video streaming for maximizing the utilization of server and network resources to meet quality of service requirements under loaded conditions.
USE - Used for piecewise streaming of video.
ADVANTAGE - The system effectively utilizes the server resources by streaming the video from the edge **nodes** of a dedicated streaming overlay **network**. The network infrastructure is utilized effectively by using the location based **bandwidth** allocation and management, thus addressing the issues related to quality of service under loaded conditions.
DESCRIPTION OF DRAWINGS - The drawing shows a typical sequence flow in a piecewise video streaming system.
302 Piecewise video streaming system

Class Codes

International Patent Classification					
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**
G06F-0015/16	A	I	F	B	20060101
H04L-0012/56	A	I		R	20060101
H04N-0007/173	A	I		R	20060101
G06F-0015/16	C	I	F	B	20060101
H04L-0012/56	C	I		R	20060101
H04N-0007/173	C	I		R	20060101

ECLA: H04L-012/56C3, H04N-007/173B4
ICO: T04L-012:56W4, T04L-012:56W9
US Classification, Current Main: 709-231000, 725-025000; Secondary: 348-E07073, 709-236000
US Classification, Issued: 72525, 709231, 709236
File Segment: EPI;
DWPI Class: T01; W02
Manual Codes (EPI/S-X): T01-N01D1B; T01-N02B1; W02-F07M; W02-F10A; W02-F10K

Alerting Abstract ...subsystem has a server interaction component for requesting a video server for the video. A streaming overlay network subsystem streams video using a streaming overlay **network** with a set of edge **nodes** and a set of core nodes. ...ADVANTAGE - The system effectively utilizes the server resources by streaming the video from the edge **nodes** of a dedicated streaming overlay **network**. The network infrastructure is utilized effectively by using the location based **bandwidth** allocation and management, thus addressing the issues related to quality of service under loaded conditions... Original Publication Data by AuthorityArgentina**Publication No.** ...**Original Abstracts:**under the conditions when both server and network are loaded. Disclosed is a system and method for meeting this challenge by using a streaming overlay **network** with edge and core **nodes**, by the **determination** of best possible path for bulk copying of a video data based on **location** information of the **nodes** thereby distributing load across the **network**, by the simultaneous frame streaming and bulk copying of a video data, by the caching of a video data in the overlay network, and by... ... under the conditions when both server and network are loaded. Disclosed is a system and method for meeting this challenge by using a streaming overlay **network** with edge and core **nodes**, by the **determination** of best possible path for bulk copying of a video data based on **location** information of the **nodes** thereby distributing load across the **network**, by the simultaneous frame streaming and bulk copying of a video data, by the caching of a video data in the overlay network, and by... ...**Claims:**managing user interactions and display, said interactive video client subsystem comprising: a server interaction element for requesting a video server for a video; and a **client** overlay **network** interaction element for receiving said video stream from a plurality of edge **nodes** of a streaming overlay **network**, wherein said streaming overlay network is a part of said piecewise video streaming system; (b) a video on demand service subsystem for managing a video... ... a

client interaction element for receiving said request for said video from said user; a server overlay network interaction element for interacting with an edge **node** of a streaming overlay **network**, wherein said streaming overlay network is a part of said piecewise video streaming system; and a video request processing element for processing said request; and (c) a streaming overlay network subsystem for efficient streaming using a streaming overlay **network** with a plurality of edge **nodes** and a plurality of core **nodes**, said streaming overlay **network** subsystem comprising: a bulk copying element for copying a video file from a **node** of said streaming overlay **network** to another **node** of said streaming overlay **network**; a frame streaming element for streaming a video from a **node** of said streaming overlay **network** to a **client**; a bulk caching element for caching a video file; a routing and **bandwidth** management element for maximally utilizing the available **bandwidth** across said streaming overlay network; and a cache management element for managing a plurality of video files in a cache associated with a **node** of said streaming overlay **network**. ... ... What is claimed is:1. A piecewise video streaming system for maximizing the utilization of network resources of a **network** with a plurality of **nodes** comprising a plurality of edge nodes and a plurality of core nodes to meet quality of service requirements under loaded conditions of said network, saidBasic Derwent Week: 200508

20/69,K/8 (Item 8 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0014365078 *Drawing available*
WPI Acc no: 2004-553822/200453
XRPX Acc No: N2004-438187
Peer to peer network content distributing method, involves transmitting content from distributor station to target peer stations, and selecting transmission path for content delivery based on content location
Patent Assignee: BANDWIZ INC (BAND-N)
Inventor: AMIAZ T; LUBETZKY E; NEERMAN H; WEIHS J

Patent Family (1 patents, 106 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2004063840	A2	20040729	WO 2004IL18	A	20040108	200453	B

Priority Applications (no., kind, date): US 2003439021 P 20030109

Alerting Abstract WO A2
NOVELTY - The method involves supplying content at a distributor station, and transmitting the content from the distributor station to target peer stations (110). The data is retransmitted to another set of target peer stations. The transmission of the peer stations is managed by a manager (140), where the manager **selects** transmission **path** based on connection **bandwidth**, content **location** and availability of peer **stations**.
USE - Used for distributing content to a workstation e.g. computer, and/or group of

workstations in a peer to peer **network** e.g. Internet.
ADVANTAGE - The manager periodically evaluates the optional content sources relative to the list of target stations and finds an optimal routing solution for transmitting the content from the sources to the targets, thereby providing a minimal distribution time in the network.
DESCRIPTION OF DRAWINGS - The drawing shows a schematic illustration of a network implementing enterprise content delivery.
100 Content delivery system
110 Peer stations
120 Network
140 Manager
150 Distributor

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
G06F-0015/173	A	I		R	20060101
H04L-0012/56	A	N		R	20060101
H04L-0029/06	A	N		R	20060101
H04L-0029/08	A	I		R	20060101
G06F	S	I		R	20060101
G06F-0015/16	C	I		R	20060101
H04L-0012/56	C	N		R	20060101
H04L-0029/06	C	N		R	20060101
H04L-0029/08	C	I		R	20060101

ECLA: H04L-029/08A7, H04L-029/08N31T, H04L-029/08N31Y, H04L-029/08N9P
ICO: T04L-012:56W9, T04L-029:06C8A, T04L-029:08N9A
File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-N02A3B; T01-N02B1

Alerting Abstract ...data is retransmitted to another set of target peer stations. The transmission of the peer stations is managed by a manager (140), where the manager **selects** transmission **path** based on connection **bandwidth**, content **location** and availability of peer **stations**. USE - Used for distributing content to a workstation e.g. computer, and/or group of **workstations** in a peer to peer **network** e.g. Internet ... Original Publication Data by AuthorityArgentina**Publication No. Original Abstracts:** A method of distributing content in a peer to peer network comprising: supplying a **content** at a distributor **station**; transmitting the content from the distributor station to one or more target peer stations, each of which retransmits the data to one or more other...

20/69,K/9 (Item 9 from file: 350)

0014255055 *Drawing available*
WPI Acc no: 2004-441237/200441
XRPX Acc No: N2004-349027

Internet traffic routing method, involves analyzing geographical location of intermediate hosts in route to determine source location or destination for directing network traffic to desired destination

Patent Assignee: DIGITAL ENVOY INC (DIGI-N); FRIEDMAN R (FRIE-I); LUTCH B (LUTC-I); PAREKH S (PARE-I)
Inventor: FRIEDMAN R; LUTCH B; PAREKH S

Patent Family (4 patents, 101 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2004049637	A1	20040610	WO 2002US37725	A	20021126	200441	B
AU 2002359469	A1	20040618	AU 2002359469	A	20021126	200471	E
			WO 2002US37725	A	20021126		
EP 1568174	A1	20050831	EP 2002794011	A	20021126	200561	E
			WO 2002US37725	A	20021126		
US 20060146820	A1	20060706	WO 2002US37725	A	20021126	200645	E
			US 2006536630	A	20060208		

Priority Applications (no., kind, date): WO 2002US37725 A 20021126

Alerting Abstract WO A1
NOVELTY - The method involves receiving traffic of Internet (7) and finding a destination of the traffic. The geographic location of a source or destination is determined by analyzing geographic location of intermediate hosts in a route of Internet. A traffic manager (30) directs the traffic to a desired destination based on the source location or destination.
USE - Used for routing traffic of a network e.g. Internet (claimed), coaxial cable network, hybrid fiber coaxial cable system, fiber distribution network, satellite system, terrestrial over-the-air broadcasting network, wireless network and infrared network that deliver information to a TV product and a desk-top **computer**, cellular digital packet data (CDPD) **network**, packet digital or analog network, circuit-switched digital or analog data network, wireless ATM or frame relay network, EDGE, CDMAONE, and generalized packet radio service (GPRS) network that deliver information to a laptop computer and a personal digital assistant (PDA), AMPS, PCS, GSM, NAMPS, USDC, IS-95, GSC, Pocsag, FLEX, DCS-1900, PACS, MIRS, e-TACS, NMT, C-450, ERMES, CD2, DECT, DCS-1800, JTACS, PDC, NTT, NTACS, NEC, and PHS networks for advertising goods, service.
ADVANTAGE - The method determines the geographical locations of destination or

source on Internet traffic, thereby efficiently routing the traffic. The method not only considers the most direct route but also considers the speed, available **bandwidth**, and reliability of the routing, thereby effectively routing the network traffic.
DESCRIPTION OF DRAWINGS - The drawing shows a block diagram of a network having a collection system and a determination system.
7 Internet
10 Collection system
20 Location database
30 Determination system
32 Intermediate host

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
H04L-0012/56	A	I	F	B	20060101
H04L-0012/56	A	I		R	20060101
H04L-0029/08	A	I		R	20060101
H04L-0012/56	C	I	L	B	20060101
H04L-0012/56	C	I		R	20060101
H04L-0029/08	C	I		R	20060101

ECLA: H04L-012/56C3, H04L-029/08N17, H04L-029/12A2A
ICO: T04L-012:56W19B, T04W-040:20
US Classification, Current Main: 370-390000
US Classification, Issued: 370390
File Segment: EPI;
DWPI Class: W01
Manual Codes (EPI/S-X): W01-A03B; W01-A06E1; W01-A06G2; W01-B05A1A; W01-C02A7; W01-C05B3J

Alerting Abstract ...network, satellite system, terrestrial over-the-air broadcasting network, wireless network and infrared network that deliver information to a TV product and a desk-top **computer**, cellular digital packet data (CDPD) **network**, packet digital or analog network, circuit-switched digital or analog data network, wireless ATM or frame relay network, EDGE, CDMAONE, and generalized packet radio service... ...or source on Internet traffic, thereby efficiently routing the traffic. The method not only considers the most direct route but also considers the speed, available **bandwidth**, and reliability of the routing, thereby effectively routing the network traffic... Original Publication Data by AuthorityArgentina**Publication No.** ...**Original Abstracts:** Internet traffic and routes the traffic in the most efficient manner. A set of analyzers may be disposed to analyze the network, such as the **geographic** locations of **nodes** in the **network**, **latency** times and **speed** between **nodes**, available **bandwidth**, etc. The traffic **manager** obtains this intelligence on the network from the analyzers and routes traffic accordingly. The traffic manager considers not only the most direct route but also considers the speed, available

bandwidth, and reliability of **the** routing... ... A traffic manager (**30**) determines the geographic locations of end points on Internet traffic and **routes** the traffic in the most efficient manner. A set of analyzers may be disposed to analyze the network, such as the geographic **locations** of **nodes** in the **network**, **latency** times and speed between **nodes**, available **bandwidth**, etc. The **traffic** manager obtains this intelligence on **the network from** the analyzers and routes traffic accordingly. The traffic manager considers not only the most direct route but also considers the speed, available **bandwidth**, and reliability of the routing. ... ... A traffic manager (30) determines the geographic locations of end points on Internet traffic and **routes** the traffic in the most efficient manner. A set of analyzers may be disposed to analyze the network, such as the geographic **locations** of **nodes** in the **network**, latency times and speed between **nodes**, available **bandwidth**, etc. The **traffic** manager **obtains** this intelligence **on** the **network** from the analyzers **and** routes **traffic** accordingly. The traffic manager considers not only the most direct route but also considers the speed, available **bandwidth**, and reliability of the routing. ...Basic Derwent Week: **2002WO-US0037725**

20/69,K/15 (Item 15 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0013497455 *Drawing available*
WPI Acc no: 2003-589926/**200356**
XRPX Acc No: N2003-469640
Automated routing system for communications network has find module that identifies possible capacity links, and build module to construct graph of communication network with connectivity of links
Patent Assignee: LEVEL 3 COMMUNICATIONS (LEVE-N); LEVEL 3 COMMUNICATIONS INC (LEVE-N)
Inventor: ASALIAN K; BONEWITZ C M; HENES A J; HOLLMAN B P; JOSEPH G T; MARTIN J L; RYCZEK G L; TRAIN C G; YAWORSKI G R

Patent Family (5 patents, 33 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
EP 1331773	A2	20030730	EP 2003445013	A	20030124	200356	B
US 20030142808	A1	20030731	US 200257362	A	20020125	200357	E
CA 2416752	A1	20030725	CA 2416752	A	20030121	200360	E
US 7146000	B2	20061205	US 200257362	A	20020125	200680	E
US 20070091868	A1	20070426	US 200257362	A	20020125	200730	E
			US 2006566649	A	20061204		

Priority Applications (no., kind, date): US 200257362 A 20020125; US 2006566649 A 20061204

Alerting Abstract EP A2
NOVELTY - The automated routing system includes a find module to identify one or more possible capacity links within the communication network. Each capacity link represents an ability to transport data over a predefined segment of the communication network between the source location and the destination location. A build module constructs a capacity graph of the communication network depicting connectivity of each possible capacity link to an adjacent possible capacity link so that one or more possible routes are defined between the source node and the destination node. A select module applies a routing algorithm to the capacity graph to select an optimal route from the one or more possible routes based on a calculated cost factor for installation of the communication line into each possible routes within the **computer network**.
DESCRIPTION - INDEPENDENT CLAIMS are also given for:

A. a method for designing a route in a communications **network**, and
B. a **computer** program product.

USE - For designing a route in a communications network through which a communication line may be installed between a source location and a destination location as specified in a service request for the communication line.
ADVANTAGE - Increases the speed with which a communications route may be routed.
DESCRIPTION OF DRAWINGS - The drawing shows a system for automatically installing communication lines in response to network service requests.

Class Codes

International Patent Classification					
IPC	**Class Level**	**Scope**	**Position**	**Status**	**Version Date**
H04L-0012/28	A	I	L	B	20060101
H04L-0012/56	A	I		R	20060101
H04M-0007/00	A	I	F	B	20060101
H04L-0012/28	A	I	F	B	20060101
H04L-0012/28	C	I	L	B	20060101
H04L-0012/56	C	I		R	20060101
H04M-0007/00	C	I	F	B	20060101
H04L-0012/28	C	I		B	20060101

ECLA: H04L-012/56C11
ICO: T04L-012:56W19, T04L-012:56W9
US Classification, Current Main: 370-351000, 379-221010, 379-221060; Secondary: 370-238000, 370-254000 , 379-027070, 379-114020, 379-201120
US Classification, Issued: 37927.07, 379114.02, 379201.12, 379221.01, 370351, 370238, 379221.06, 370254
File Segment: EPI;
DWPI Class: T01

Manual Codes (EPI/S-X): T01-J10C1; T01-J15A4; T01-N02A3B; T01-S03

Alerting Abstract ...from the one or more possible routes based on a calculated cost factor for installation of the communication line into each possible routes within the **computer network**. ... a method for designing a route in a communications **network**, and a **computer** program product... Original Publication Data by AuthorityArgentina**Publication No.** ...**Claims:**of each of the possible capacity links to an adjacent possible capacity link such that one or more possible routes are defined between a source **node** representing the source **location** and a destination **node** representing the destination **location**; and a **select** module applying a **routing** algorithm to the capacity graph to **select** an optimal **route** from the one or more possible routes based on a calculated cost factor for installation of the communication line into each of the possible routes within the **computer network**. ... ... of each of the possible capacity links to an adjacent possible capacity link such that one or more possible routes are defined between a source **node** representing the source **location** and a destination **node** representing the destination **location**; and a **select** module applying a **routing** algorithm to the capacity graph to **select** an optimal **route** from the one or more possible routes based on a calculated cost factor for installation of the communication line into each of the possible routes within the **computer network**. ... ... communication network, wherein the find module filters the capacity links to generate a filtered set of capacity links that satisfy a service type and a **bandwidth** specified in the service request;a build module creating a list of one or more possible routes from the filtered set of capacity links, each... ... of each of the possible capacity links to an adjacent possible capacity link such that one or more possible routes are defined between a source **node** representing the source **location** and a destination **node** representing the destination **location**; anda **select** module applying a **routing** algorithm to the capacity graph to **select** an optimal **route** from the one or more possible routes based on a calculated cost factor for installation of the communication line into each of the possible routes within the **computer network.>Basic Derwent Week: 200356**

20/69,K/28 (Item 28 from file: 350)
DIALOG(R)File 350: Derwent WPIX

0010273298 *Drawing available*
WPI Acc no: 2000-586139/**200055**
XRPX Acc No: N2000-433704
Autonomously operated migratory node for wireless communication network, captures payload message when ID of received network packet matches local ID, otherwise forwards network packet to destination
Patent Assignee: PROTO J J (PROT-I); ROBERT B G (ROBE-I)
Inventor: PROTO J J; ROBERT B G

Patent Family (15 patents, 89 countries)							
Patent Number	**Kind**	**Date**	**Application Number**	**Kind**	**Date**	**Update**	**Type**

US 6104712	A	20000815	US 1999253690	A	19990222	200055	B
WO 2000051294	A1	20000831	WO 2000US4036	A	20000217	200055	E
AU 200029990	A	20000914	AU 200029990	A	20000217	200063	E
EP 1161815	A1	20011212	EP 2000908694	A	20000217	200204	E
			WO 2000US4036	A	20000217		
CN 1341311	A	20020320	CN 2000804104	A	20000217	200246	E
AU 764646	B	20030828	AU 200029990	A	20000217	200361	E
CN 1642125	A	20050720	CN 2000804104	A	20000217	200575	E
			CN 200410095784	A	20000217		
CN 1183716	C	20050105	CN 2000804104	A	20000217	200620	E
EP 1161815	B1	20060705	EP 2000908694	A	20000217	200644	E
			WO 2000US4036	A	20000217		
DE 60029202	E	20060817	DE 60029202	A	20000217	200655	E
			EP 2000908694	A	20000217		
			WO 2000US4036	A	20000217		
IL 144971	A	20060705	IL 144971	A	20000217	200669	E
CA 2371810	C	20070213	CA 2371810	A	20000217	200714	E
			WO 2000US4036	A	20000217		
ES 2267502	T3	20070316	EP 2000908694	A	20000217	200722	E
DE 60029202	T2	20070614	DE 60029202	A	20000217	200740	E
			EP 2000908694	A	20000217		
			WO 2000US4036	A	20000217		
CN 100380881	C	20080409	CN 200410095784	A	20000217	200845	E

Priority Applications (no., kind, date): US 1999253690 A 19990222

Alerting Abstract US A

NOVELTY - A processor **determines** node-to-node **path** from source to destination based on information regarding instantaneous **position** fixes of other migratory **nodes** obtained from a database, when migratory node operates as source. The pay load message is captured when ID of received network packet matches with local ID, otherwise the network packet is forwarded to destination based on information contained in packet. DESCRIPTION - An user interface receives destination ID and pay load message from user. A geo location detector detects instantaneous position of migratory node. A database receives instantaneous position fixes of other migratory nodes. A wireless transmitter transmits payload message to at least another node. A wireless receiver receives payload message from this **node**. A **processor** processes **network** packet containing instantaneous position, source ID indicating local ID, destination ID indicating

destination node, and pay load message. INDEPENDENT CLAIMS are also included for the following:

A. amorphous communication network;
B. wireless communication method

USE - For wireless network communication system e.g. for amorphous communication **network** utilizing several migratory access **nodes** to provide access and transfer of information.
ADVANTAGE - Avoids infrastructure development costs by liberating individuals from control, monitoring, administration and billing requirements.
DESCRIPTION OF DRAWINGS - The figure shows the simplified **block** diagram of migratory **node**.

Class Codes

International Patent Classification

IPC	Class Level	Scope	Position	Status	Version Date
H04L-0012/28	A	I	F	B	20060101
H04L-0012/28	A	I	F		20060101
H04L-0012/28	A	I		R	20060101
H04L-0012/56	A	I	L	B	20060101
H04L-0012/56	A	I	L		20060101
H04L-0012/56	A	I		R	20060101
H04L-0029/06	A	I	L	B	20060101
H04L-0029/06	A	I	L		20060101
H04L-0029/06	A	I		R	20060101
H04L-0029/12	A	I		R	20060101
H04L-0012/28	C	I	F	B	20060101
H04L-0012/28	C	I	L	B	20060101
H04L-0012/28	C	I		R	20060101
H04L-0012/28	C	I			20060101
H04L-0012/56	C	I	L	B	20060101
H04L-0012/56	C	I		R	20060101
H04L-0012/56	C	I			20060101
H04L-0029/06	C	I	L	B	20060101
H04L-0029/06	C	I		R	20060101
H04L-0029/06	C	I			20060101
H04L-0029/12	C	I		R	20060101

ECLA: H04L-012/28P1, H04L-012/56B, H04L-012/56C, H04L-029/12A6, H04L-029/12A9A
ICO: T04L-012:56W6B, T04L-012:56W6C, T04W-008:26, T04W-028:04, T04W-028:18, T04W-040:06, T04W-040:08, T04W-040:20, T04W-040:24U, T04W-040:28, T04W-040:30, T04W-040:36, T04W-064:00, T04W-080:00
US Classification, Issued: 370389, 34257, 34258, 455432
File Segment: EPI;
DWPI Class: W01
Manual Codes (EPI/S-X): W01-A03B; W01-A06E1; W01-A06F; W01-A06G2

Autonomously operated migratory node for wireless communication network, captures payload message when ID of received network packet matches local ID, otherwise forwards network packet to destination ...**Original Titles:**WIRELESS COMMUNICATION **NETWORK** INCLUDING PLURAL MIGRATORY ACCESS **NODES** ... ...WIRELESS COMMUNICATION **NETWORK** INCLUDING PLURAL MIGRATORY ACCESS **NODES** ... ...Wireless communication **network** including plural migratory access **nodes**. ... ...WIRELESS COMMUNICATION **NETWORK** INCLUDING PLURAL MIGRATORY ACCESS **NODES Alerting Abstract** ...NOVELTY - A processor **determines** node-to-node **path** from source to destination based on information regarding instantaneous **position** fixes of other migratory **nodes** obtained from a database, when migratory node operates as source. The pay load message is captured when ID of received network packet matches with local... ... position fixes of other migratory nodes. A wireless transmitter transmits payload message to at least another node. A wireless receiver receives payload message from this **node**. A **processor** processes **network** packet containing instantaneous position, source ID indicating local ID, destination ID indicating destination node, and pay load message. INDEPENDENT CLAIMS are also included for the... ... USE - For wireless network communication system e.g. for amorphous communication **network** utilizing several migratory access **nodes** to provide access and transfer of information... ... DESCRIPTION OF DRAWINGS - The figure shows the simplified **block** diagram of migratory **node**.Original Publication Data by AuthorityArgentina**Publication No.** ...**Original Abstracts:**IP address, URL, telephone number. Voice, data, or video is transferred to other migratory nodes (104) or to a conventional land-based telephone or data **terminal** via a PSTN, Internet, ATM **network**, etc. A geolocation detector in the node (200), such as a GPS, keeps track of the instantaneous position, which is conveyed to a locally or... ... successful receipt of information. The node's wireless transceiver (260) also adapts to the environment and terrain to control transmission and reception characteristics according to **bandwidth**, inter-node spacing, signal strength, bit error rate, node population density, frequency spectrum, data rate and/or air interface protocol. Nodes (200) may periodically or... ... an IP address, URL, telephone number. Voice, data, or video is transferred to other migratory nodes or to a conventional land-based telephone or data **terminal** via a PSTN, Internet, ATM **network**, etc. A geolocation detector in the node, such as a GPS, keeps track of the instantaneous position, which is conveyed to a locally or remotely... ... upon successful receipt of information. The node's wireless transceiver also adapts to the environment and terrain to control transmission and reception characteristics according to **bandwidth**, inter-node spacing, signal strength, bit error rate, node population density,

frequency spectrum, data rate and/or air interface protocol. Nodes may periodically or randomly... ... IP address, URL, telephone number. Voice, data, or video is transferred to other migratory nodes (104) or to a conventional land-based telephone or data **terminal** via a PSTN, Internet, ATM **network**, etc. A geolocation detector in the node (200), such as a GPS, keeps track of the instantaneous position, which is conveyed to a locally or... ... successful receipt of information. The node's wireless transceiver (260) also adapts to the environment and terrain to control transmission and reception characteristics according to **bandwidth**, inter-node spacing, signal strength, bit error rate, node population density, frequency spectrum, data rate and/or air interface protocol. Nodes (200) may periodically or... ...**Claims:**An autonomously operating migratory node (200) migrating with a user to provide migratory access points of a wireless network having a **network** layer communication protocol, said **node** being **characterized by**: a user interface (260) capable of receiving a destination ID and a payload message from a user, said destination ID being indicative... ... fixes from geolocation detectors of other migratory nodes,a wireless transmitter (201, 202, 203, 204) capable of transmitting said payload message to at least another **node** over said **network**,a wireless receiver (210, 211, 212, 213) capable of receiving a payload message from at least another **node** in communication with said **network**,a **processor** (250) capable of assemblying a **network** packet containing said instantaneous position fix, a source ID indicative of said local ID, a destination ID indicative of said destination node, and said payload... ... a routine operable to obtain land-based position fixes of said other migratory nodes from said database and to effect determination of a multi-hop **node**-to-**node** path over said **network** from a source to a destination based on information in said database when said migratory node operates as said source, to effect capture of a... An autonomously operating migratory node that provides migratory access points of a wireless **network**, said **node** comprising:a user interface capable of receiving a destination ID and a payload message from a user, said destination ID being indicative of a destination... ... of transmitting said payload message to at least another node,a wireless receiver capable of receiving a payload message from at least another node,a **processor** that effects assembly of a **network** packet containing said instantaneous position, a source ID indicative of said local ID, a destination ID indicative of said destination node, and said payload message; andsaid processor further including a routine that obtains **position** fixes of said ether migratory **nodes** from said database and that effects **determination** of a node-to-node **path** from a source to a destination based on information in said database when said migratory node operates as said source, that effects capture of a... Basic Derwent Week: **200055**

Patent full-text files

24/5K/1 (Item 1 from file: 348)
DIALOG(R)File 348: EUROPEAN PATENTS

02109549

Geo-intelligent router

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	Country	Number	Kind	Date	
Patent	EP	1699189	A1	20060906	(Basic)
Application	EP	2006011091		20030317	
Priorities	US	106523		20020325	

Related Parent Numbers: Patent (Application):EP 1488579 (EP 2003714211)

International Classification (Version 8) IPC	Level	Value	Position	Status	Version	Action	Source	Office
H04L-0012/56	A	I	F	B	20060101	20060801	H	EP
H04L-0012/26	A	I	L	B	20060101	20060801	H	EP

Abstract EP 1699189 A1

A traffic reporter gathers real-time information on traffic conditions within a network and sends out traffic reports to traffic managers. The traffic reporter analyzes the network and also gathers network information from the traffic managers and analyzers dispersed throughout the network. These traffic reports provide real-time information on network conditions to allow the traffic managers to route network traffic in the most efficient, reliable, and fastest manner.

Specification: ...information can be used in a number of ways. For example, this information may be used in directing traffic through the most optimal or efficient **route**. In **selecting** a **route**, the traffic managers 70 can factor in the geographic locations of the origination and destination points, the geographic **locations** of intermediate **nodes**,

bandwidth available at various nodes, the status of nodes, etc. Essentially, the traffic managers 70 can route the traffic using any or all of the information on the network, the origination or destination points, or any intermediate **node** or **network**. Furthermore, the traffic manager 70 may be positioned anywhere within the network, including at one or more of the nodes, at the origination or destination...

24/5K/3 (Item 3 from file: 348)
DIALOG(R)File 348: EUROPEAN PATENTS

01664830

GEO-INTELLIGENT TRAFFIC REPORTER

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	Country	Number	Kind	Date	
Patent	EP	1488579	A1	20041222	(Basic)
	EP	1488579	B1	20060531	
	WO	2003084159		20031009	
Application	EP	2003714211		20030317	
	WO	2003US8164		20030317	
Priorities	US	106523		20020325	

Designated States:
AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES;

FI; FR; GB; GR; HU; IE; IT; LI; LU; MC;
NL; PT; RO; SE; SI; SK; TR;

Extended Designated States:
AL; LT; LV; MK;

International Patent Class (V7): H04L-012/56; H04L-012/26

International Classification (Version 8) IPC	Level	Value	Position	Status	Version	Action	Source	Office
H04L-0012/56	A	I	F	B	20060101	20031011	H	EP
H04L-0012/26	A	I	L	B	20060101	20031011	H	EP

NOTE: No A-document published by EPO

Specification: ...information can be used in a number of ways. For example, this information may be used in directing traffic through the most optimal or efficient **route**. In **selecting** a **route**, the traffic managers 70 can factor in the geographic locations of the origination and destination points, the geographic **locations** of intermediate **nodes**, **bandwidth** available at various nodes, the status of nodes, etc. Essentially, the traffic managers 70 can route the traffic using any or all of the information on the network, the origination or destination points, or any intermediate **node** or **network**. Furthermore, the traffic manager 70 may be positioned anywhere within the network, including at one or more of the nodes, at the origination or destination...

24/5K/4 (Item 4 from file: 348)
DIALOG(R)File 348: EUROPEAN PATENTS

01613225

Routing engine for telecommunications network

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	Country	Number	Kind	Date	
Patent	EP	1331773	A2	20030730	(Basic)
	EP	1331773	A3	20051019	
Application	EP	2003445013		20030124	
Priorities	US	57362		20020125	

International Patent Class (V7): H04L-012/56

Abstract EP 1331773 A2

A system for automated installation of a communication line using an optimal route between a source location and a destination location is disclosed. The system includes a routing engine providing an automated design process for rendering the optimal route. The routing engine utilizes a routing algorithm to select the optimal route from a graph of capacity links defining a plurality of possible routes between the source and destination locations. If, at any time during the design process, the optimal route or capacity links defining the optimal route are detected as unavailable for any reason, the routing engine re-initiates the design process and thereafter selects a new optimal route based upon a new capacity graph built without the previously unavailable capacity link. Once designed, the available optimal route is provided to a command and control engine, which, in turn, manages the installation of the communication line using the optimal route. The command and control engine manages the process for assigning the optimal route in the provisioning system.

Claims: ...of each of the possible capacity links to an adjacent possible capacity link such that one or more possible routes are defined between a source **node** representing the source **location** and a destination **node** representing the destination **location**; and

a **select** module applying a **routing** algorithm to the capacity graph to **select** an optimal **route** from the one or more possible routes based on a calculated cost factor for installation of the communication line into each of the possible routes within the **computer network**.

2. The system of claim 1, further comprising

an invoke module retrieving a route policy for the communication line specifying routing rules based on a given service type of the service request and **bandwidth** required for installation of the communication line and invoking the route policy such that the find module identifies only possible capacity links that satisfy the... ...of each of the possible capacity links to an adjacent possible capacity link such that one or more possible routes are defined between a source **node** representing the source **location** and a destination **node** representing the destination **location**;

calculating a cost factor for each possible capacity link within the communication network; and

selecting an optimal **route** from the possible routes based on the calculated cost factor for each possible link.

14. The method of claim 13, wherein the calculating act comprises... ...identifying step comprises:

retrieving a route policy for the communication line specifying routing rules based on a given service type of the service request and **bandwidth** required for installation of the communication line; and

invoking the route policy to identify only possible capacity links that satisfy the routing rules.

17. The method of claim 13, wherein the selecting act comprises:

selecting a source **network** element for connecting the source **node** to a first customer demarcation located at the source location; and

selecting a destination **network** element for connecting the destination **node** to a second customer demarcation located at the destination location.

18. The method of claim 17, further comprising:

testing whether the source network element contains...of each of the possible capacity links to an adjacent possible capacity link such that one or more possible routes are defined between a source **node** representing the source **location** and a destination **node** representing the destination **location**;

calculating a cost factor for each possible capacity link within the communication network; and

selecting an optimal **route** from the possible routes based on the calculated cost factor for each possible link.

27. The computer process in the computer program product of claim... ...identifying step comprises:

retrieving a route policy for the communication line specifying routing rules based on a given service type of the service request and **bandwidth** required for installation of the communication line; and

invoking the route policy to identify only possible capacity links that satisfy the routing rules.

29. The computer process in the computer program product of claim 26, wherein the selecting act comprises:

selecting a source **network** element for connecting the source **node** to a first customer demarcation located at the source location; and

selecting a destination **network** element for connecting the destination **node** to a second customer demarcation located at the destination location.

30. The computer process in the computer program product of claim 29, wherein the computer...

24/5K/10 (Item 10 from file: 348)
DIALOG(R)File 348: EUROPEAN PATENTS

01175562

ACCOUNTING AND BILLING BASED ON NETWORK USE

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	Country	Number	Kind	Date	
Patent	EP	1135740	A1	20010926	(Basic)
	EP	1135740	B1	20081008	
	WO	2000033229		20000608	
Application	EP	99960652		19991203	
	WO	99US28763		19991203	
Priorities	US	111008	P	19981204	
	US	394004		19990910	

International Patent Class (V7): G06F-017/60

International Classification (Version 8) IPC	Level	Value	Position	Status	Version	Action	Source	Office
H04L-0012/14	A	I	F	B	20060101	20080903	H	EP

CITED PATENTS: (WO A)

US 5163042 A ; US 5315592 A ; US 5710884 A ; US 5754787 A ; US 5832069 A ; US 5909238 A ; US 5970050 A ; US 6005926 A ;
NOTE: No A-document published by EPO

Specification: ...16, 20, 21, 14 transmitted between source and destination users during an accumulation period. The users may, for example, be applications on machines at particular **network node** locations A-D. The set of **collection units** 32-36 is sufficient to determine the data traffic over each path between a pair of **network node** locations A-D.

From the traffic data over the links 12-22 associated with packet transmissions, one can determine the data traffic transmitted between each pair of the **network** node locations A-D.

The **collection units** 32-36 periodically send their accumulated traffic data to a collector subsystem 37, i.e., a designated **computer** having a **network** interface. The collector subsystem 37 uses the traffic data for two purposes. First, the data is used to determine the average utilization S of each link, which is the measured used bandwidth over a period of time divided by the full **bandwidth**. Herein, the used bandwidth is referred to as the nominal bandwidth. Second, the collection subsystem 37 uses the data to determine the prices for transmitting... ...In such embodiments, the billing subsystem 38 receives data used for billing from one or more collector subsystems 37.

An interface 43-47 connects each **collection unit** 32-36 to one of the associated links 13, 21, 16, 20, 14. Each collection unit 32-36 is similar in construction and function. The... ...each link 1 defines a nominal bandwidth B1)). B1)) equals BF1))S1)) where BF1)) is the full bandwidth of the link 1. Thus, the nominal **bandwidth** B1)) is a used **bandwidth** of the link 1 averaged over the predetermined time period of block 49 of FIG 2A for all transmissions over the network. The embodiments employ the nominal link **bandwidths** to determine prices to charge users for transporting data communications between two endpoints. The prices include a portion for maintenance, operation, and infrastructure costs and... ...FIGREF IDREF=F0004>FIG. 2B is a high-level flow chart illustrating a method 51 for determining prices to bill users at pairs of **nodes** for their usage of the **network** 10 shown in FIG. 1B. At block 52, the collector subsystem 37 selects a pair of source and destination **node locations**, for example **nodes** A, C. At **block** 53, the collector subsystem 37 finds the set of **paths** between the **selected** source and destination **node locations** A, C having the smallest number of links 12-22, i.e., the shortest paths. Referring to FIG. 1A, for the... ...are iteratively combined by repeatedly applying equations 59-61 until only one effective path remains. The remaining effective path is the virtual path. The nominal **bandwidth** and price of the remaining path are the nominal **bandwidth** BVP)) and usage price CVP)) of the virtual path. The price per byte PVP)) allocated to sending data between the two nodes S and D is then the usage price CVP)) for using all links in the virtual path divided nominal **bandwidth** BVP)) of the virtual path.

The collector subsystem 37 employs the iterative procedure of FIG. 3B to determine the usage price CVP)) and nominal **bandwidth** BVP)) for the virtual **path** between the **selected** pair of **node locations** A, C at **block** 54 of FIG. 2B. The collector subsystem 37 only uses the known usage prices C12))-C22)) and nominal **bandwidths** B12))-B22)) of the links 12-22 to determine the price per byte PVP)) of the virtual path. However, the nominal **bandwidths** B12))-B22)) are not known a priori, and initially, one enters the usage prices C12))-C22)) and full **bandwidths** BF12))-BF22)) of each link 12-22 into the collector subsystem 37. Then, the collector subsystem 37 determines the nominal **bandwidths** B12))-B22)) by the method 48 of FIG. 2A and PVP)) for each node pair by the method 51 illustrated in...

01122218

SECURE NETWORK-ROUTED VOICE PROCESSING

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	Country	Number	Kind	Date
Patent	WO	200445241	A1	20040527
Application	WO	2003US27355		20030829
Priorities	US	2002295744		20021114

Main International Patent Classes (Version 7):

IPC	Level
H04Q-007/20	Main

Language Publication Language: English
Filing Language: English
Fulltext word count: 8325

English Abstract:

Systems and methods are provided for routing voice communications through a mobile communication system having a self-contained infrastructure, such as a two-way radio communication system. The voice communications are transmitted as digitized voice

packets over radio frequency links. The digitized voice packets contain one or more destination addresses in addition to other routing information. Routers receive the digitized voice packet and extract the routing information. The routing information is used in conjunction with a member router database to determine where to route the digitized voice packets.

Detailed Description:

...determine optimal transmission paths to route the voice message to desired receivers, for example, through other routers and/or mobile communication units. The optimal transmission **paths** can be **determined** using statistical modeling, decision modeling, bayesian modeling, or other decision techniques. Each router's optimal path can be based on one or more parameters (e.g., time, priority, router **location**, mobile communication **unit location**, **bandwidth**, load sharing).

[0038] FIG. 4 illustrates a functional block diagram of a configuration manager 60 in accordance with an aspect of the present... ...operator or user, and generates configuration information 74 to one or more routers. The information includes a network definition 66 defining the members of the **network**, for example, the mobile communication **units** or two-way radios, physical and logical address information with respect to the members, and initial network connection information. The information also includes router information...

Claims:

...at least one different radio type having different communication parameters and having different security parameters.

17 The system of claim 12, the router having a **routing path** algorithm that **determines** a **routing path** for the voice packets based on at least one of time, priority, router **location**, mobile communication **unit location**, **bandwidth** and load sharing.

18 The system of claim 12, the router having an algorithm for receiving configuration information to create a router database defining connections between routers and two-way radio **devices** in the **network**, the router using the router database and information in the digitized voice packets to route the digitizes voice packets to at least one desired destination...

24/5K/16 (Item 4 from file: 349)
DIALOG(R)File 349: PCT FULLTEXT

01054023

GEO-INTELLIGENT TRAFFIC REPORTER IC

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	Country	Number	Kind	Date
Patent	WO	200384159	A1	20031009
Application	WO	2003US8164		20030317
Priorities	US	2002106523		20020325

Main International Patent Classes (Version 7):

IPC	Level
H04L-012/56	Main
H04L-012/26	

Language Publication Language: English
Filing Language: English
Fulltext word count: 17387

English Abstract:

A traffic reporter gathers real-time information on traffic conditions within a network and sends out traffic reports to traffic managers. The traffic reporter analyzes the network and also gathers network information from the traffic managers and analyzers dispersed throughout the network. These traffic reports provide real-time information on network conditions to allow the traffic managers to route network traffic in the most efficient, reliable, and fastest manner.

Detailed Description:

...iliformation can be used 111 a number of ways.

For example, this information may be used in directing traffic through the most optimal or efficient **route**. In **selecting** a **route**, the traffic managers 70 can factor in the geographic locations of the origination and destination points, the geographic **locations** of interniediate
36
nodes, **bandwidth** available at various nodes, the status of nodes, etc. Essentially, the traffic managers 70 can route the traffic using any or all of the information on the network, the origination or destination points, or any intermediate **node** or **network**. Furthermore, the traffic manager 70 may be positioned anywhere withil'i the network, 111cluding at one or more of the nodes, at the origination or...

24/5K/32 (Item 20 from file: 349)
DIALOG(R)File 349: PCT FULLTEXT

00302131

TRANSPARENT INTERCONNECTOR OF LANs BY AN ATM NETWORK

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- **BEHKI Nutan**
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- **GLENDINNING Duncan**
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	Country	Number	Kind	Date
Patent	WO	9520282	A1	**19950727**

	Country	Number	Kind	Date
Application	WO	95CA29		19950120
Priorities	GB	941092		19940121

Main International Patent Classes (Version 7):

IPC	Level
H04L-012/46	Main
H04Q-11:04	

Language Publication Language: English
Filing Language:
Fulltext word count: 10987

English Abstract:

A computer communications network comprises a plurality of interconnected ATM switches (1a, 1b, 1c) forming a WAN or LAN area network over which ATM cells are transmitted, and a plurality of devices (8, 9, 10, 11, 14) including LAN interface adapters for connection to one or more local area networks (LANs). Interface devices (6a, 6b, 6c) connect at least some of the respective ATM switches to the LAN interface adapters. The interface adapts the LAN frames for transport over the ATM network. The user devices can thus communicate through the LAN interface adapters transparently with the wide area network.

Detailed Description:

...data without further broadcasting
into the network.

The route server 4 also carries out LAN topology management to dynamically allow Adds, Moves and Changes of **LAN devices**; and to perform Admission Control on devices against rules configured by the System Administrator. The devices 9 to 14 attached to an ATM LAN are dynamically discovered by the route server and admitted into the network if allowed. The ridges 6 participate in the discovery by detecting the device. The **route** server **determines** if admission is allowed and if so what services are allowed. The route server 4 also maintains knowledge about the **location** of the **device** for long periods of time. The route server 4 allows devices of dissimilar networks to share ports into the system.

The route server 4 also provides Flexible, portable

and redundant platform support. The route server is run on a SUN **workstation** with an ATM **network** interface card supporting both single and **multiprocessor** platforms. A redundant route server 409 is supported and takes over in case of failure of the primary route server 400. An ATM based messaging protocol is used between the two platforms to ensure coordination.

Returning to Figure 1, each ATM Switch 1 provides high-**bandwidth** cell-switching that is the core of the System. There are three types of ATM switch, namely an ATM Workgroup Switch (WGS), a 36170 Switching...

NPL abstract files

21/7/3 (Item 3 from file: 2)
DIALOG(R)File 2: INSPEC

07559015
Title: Route selection in mobile multimedia ad hoc networks
Author(s): Basagni, S.; Chlamtac, I.; Farago, A.; Syrotiuk, V.R.; Talebi, R.
Author Affiliation: Erik Jonsson Sch. of Eng. & Comput. Sci., Texas Univ., Dallas, TX, USA
Book Title: 1999 IEEE International Workshop on Mobile Multimedia Communications (MoMuC'99) (Cat. No.99EX384)
Inclusive Page Numbers: 97-103
Publisher: IEEE, Piscataway, NJ
Country of Publication: USA
Publication Date: 1999
Conference Title: 1999 IEEE International Workshop on Mobile Multimedia Communications
Conference Date: 15-17 Nov. 1999
Conference Location: San Diego, CA, USA
Conference Sponsor: IEEE Commun. Soc. Tech. Committees on Comput. Commun., Multimedia Commun., Internet, & Personal Commun. ACM SIGCOMM, ACM SIGMOBILE Center for Wireless Commun., Univ. California, San Diego Center for Telecommun. Res., Coloumbia Univ
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Document Type: Conference Paper (PA)

Treatment: Theoretical or Mathematical (T)
Abstract: The problem of routing packets in ad hoc networks is complex due to the lack of network infrastructure, shifting the reliance of packet forwarding onto the **nodes** of the **network**, all of which are mobile. In order to improve the robustness and adaptation of protocols for ad hoc networks to node mobility, we propose a new metric that bases route selection on the probability of the existence of the route (route availability). Specifically, we derive a simple closed form expression for the computation of the availability of a route, that takes into account node mobility and dependencies between links, which can then be used to satisfy the requirements of multimedia applications. In particular, we show how by efficiently collecting measures about the geographic **location** of other **nodes**, each **node** of an ad hoc **network** can locally and efficiently compute multiple paths to a given destination node, and, based on the introduced metric, **choose** the **route** that best meets the strict requirements of multimedia applications (*14 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
INSPEC Update Issue: 2000-014

01101818
Title: Routing doctrines and their implementation in message-switching networks
Author(s): Silk, D.J.
Journal: Proceedings of the Institution of Electrical Engineers , vol.116 , no.10 , pp.1631-8
Country of Publication: UK
Publication Date: Oct. 1969
ISSN: 0020-3270
CODEN: PIEEAH
Language: English
Document Type: Journal Paper (JP)
Abstract: Three practical constraints on the choice of a deterministic routing doctrine for a connected network are defined, leading to a class of doctrines for which a weighted graph of the network exists so that the specified routes are given uniquely by minimum-cost routes through the graph. A technique for finding such a weighted graph is given. An adaptive routing doctrine is defined, which considers the current delays along links of the network. The implementation of such a doctrine is discussed, and a `distributed' solution described which is efficient, decentralised, and resilient under fault conditions. More general adaptive routing doctrines are defined, considering two parameters associated with each link, where the routing of a message may depend on its history as well as its present **position** and destination. A **device** called a dynamic **route selector** is described, which takes **routing** decisions according to the most general doctrine discussed. It is

faster than a digital computer. Finally a method for first introducing to the most general doctrine discussed. It is faster than a digital computer. Finally a method for first introducing deterministic, and then adaptive, routing on a **computer**-based **network** is outlined (*14 refs.*)
Subfile(s): B (Electrical & Electronic Engineering)
INSPEC Update Issue: 1970-002

01238223 ORDER NO: AAD92-27218
ROUTING AND CAPACITY ASSIGNMENT IN BACKBONE COMMUNICATION NETWORKS

Author: AMIRI, ALI
Degree: PH.D.
Year: 1992
Corporate Source/Institution: THE OHIO STATE UNIVERSITY (0168)
Adviser: HASAN PIRKUL
Source: Volume 5305A of Dissertations Abstracts International.
PAGE 1574 . 125 PAGES

This dissertation addresses several problems in the area of **routing** and capacity **assignment** in backbone communication networks. The first problem deals with primary **route selection** in backbone communication networks. Given the topology of the **network** (**locations** of the **nodes** and links), the traffic requirements between the communicating node pairs and the capacities of the links, a **route** has to be **identified** for each pair in order to minimize the maximum link queueing delay encountered by messages in the network.

The second problem is a variation of the first one where the objective is minimize the average queueing delay in the network. In this problem as well as the first one, the route to be selected for a communicating node pair is chosen from among all possible routes.

The third problem deals with the reliability issue in backbone communication networks. The model presented captures the effect of single-link failures. Reliability is achieved by selecting, for each communicating node pair, a primary route and a link-disjoint secondary route from among all possible routes. Traffic is switched to secondary routes when primary routes are not available due to a link failure. The objective is to minimize the weighted average delay faced by messages in the network.

The fourth problem addresses the routing and capacity assignment problem in backbone communication networks. Two tasks should be accomplished in this problem. The first one is to identify, for each communicating node pair, a route over which messages are to transmitted. The routes are to be chosen from among all possible routes. The second task is to assign a capacity to each link in the network. The capacity of a link is to be selected from among a set of discrete levels of capacity. The objective is to

minimize total system costs composed of delay costs and link connection costs.

Mathematical programming formulations of these problems are presented. Efficient solution procedures based on Lagrangean relaxations of the problems are developed. These solution procedures were tested and compared to existing methods and it was shown that our solution approaches performed better for a variety of networks with different traffic loads and costs structures.

0963162 ORDER NO: AAD87-18919

TOPOLOGICAL DESIGN OF COMPUTER COMMUNICATION NETWORKS---BACKBONE AND LOCAL ACCESS NETWORKS

Author: ALTINKEMER, KEMAL
Degree: PH.D
Year: 1987
Corporate Source/Institution: THE UNIVERSITY OF ROCHESTER (0188)
Source: Volume 4806A of Dissertations Abstracts International.
PAGE 1343 . 207 PAGES

This thesis studies the topological design of computer communication networks consisting of a backbone network and many local access networks. It concentrates on finding the topology and capacity assignment so as to minimize the system cost given end user locations and their traffic requirements. The problem is very complex and there is no exact solution procedure for it. In this thesis backbone node locations and the group of user nodes connected to a backbone node is assumed to be given, this enables to study the backbone network design and local access network design separately.

The thesis investigates tree and ring based topologies in the design of local access networks. The problem involves establishing links between users and the backbone node based on a given topology without violating the port capacity restriction so as to minimize the connection costs. This problem belongs to the NP complete class. Parallel savings algorithms for solving the problem are proposed, they perform better than existing heuristics. Another type of heuristics suggested are based on partitioning of a travelling salesman tour. It is shown that they have constant worst case error bounds of 4 and 3 in case of tree and ring networks respectively when the users have different traffic requirements. These are the first and only results known in the literature. In order to evaluate the quality of the solutions generated by the proposed heuristics, a method to obtain lower bounds to the respective problems is also developed.

For backbone network design problem we have to determine link capacities in the **network** given the **locations** of backbone **nodes** and the expected end-to-end traffic. The problem can be thought of as **determining** the **routes** between each origin-destination pair and assigning capacities to the links used by those routes. The system cost is minimized by trading off link capacity costs versus overall expected network delay costs. The proposed procedure to obtain a solution involves a Lagrangean relaxation of the

problem combined with a route generation method. The method generates routes as needed, is not restricted to a predetermined candidate route set, converges to a good solution faster and by using a proposed heuristic generates better feasible solutions than earlier methods.

21/7/22 (Item 5 from file: 35)
DIALOG(R)File 35: Dissertation Abs Online

914337 ORDER NO: AAD86-07479
TELECOMMUNICATIONS NETWORK DESIGN: SINGLE NODE OPTIMIZATION AND THE LOCATION SELECTION PROBLEM

Author: CHANG, CHI-MING
Degree: PH.D.
Year: 1985
Corporate Source/Institution: THE UNIVERSITY OF TEXAS AT ARLINGTON (2502)
Source: Volume 4702B of Dissertations Abstracts International.
PAGE 766 . 98 PAGES

This dissertation comprises two aspects of telecommunications **network** design: the single **node** optimization and the **location** selection problem. In each case the objective is to minimize the cost. Single node optimization involves the optimal trunking of automatic **route selection** of PBX's (private branch exchanges). A dynamic programming appproach is utilized here for the solution.

Location selection problem involves the selection of network tandem switch locations among candidate sites. A dynamic programming approach is used to produce an initial solution after which a branch and bound method is used to find the optimal locations. At each branching point, a nonlinear program is solved to find a local lower bound. Although the method is applied to telecommunication networks, the method can be used for other location selection problems as well.

21/7/32 (Item 6 from file: 60)
DIALOG(R)File 60: ANTE: Abstracts in New Tech & Engineer

0002053963 IP Accession No: 20081910826
System and method for piecewise streaming of video using a dedicated overlay network

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Publisher Url: http://patft.uspto.gov/netacgi/nph-

Parser?Sect1=PTO2&Sect2=HITOFF&u =/netaht ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=74 15527.PN.&OS=pn/7415527&RS=PN/7415527

Document Type: Patent
duplicate - bad date
Record Type: Abstract
Language: English
File Segment: ANTE: Abstracts in New Technologies and Engineering

Abstract:
The main challenge in providing video on demand service is to meet the quality of service requirements under the conditions when both server and network are loaded. Disclosed is a system and method for meeting this challenge by using a streaming overlay **network** with edge and core **nodes**, by the **determination** of best possible path for bulk copying of a video data based on **location** information of the **nodes** thereby distributing load across the **network**, by the simultaneous frame streaming and bulk copying of a video data, by the caching of a video data in the overlay network, and by the streaming of the video data to a client from an edge node that is close to the client.

21/7/44 (Item 18 from file: 60)
DIALOG(R)File 60: ANTE: Abstracts in New Tech & Engineer

0000494710 IP Accession No: 2008046311
Data distribution method and apparatus and computer program

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, USA
Publisher Url: http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u =/netaht ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=62 26673.PN.&OS=pn/6226673&RS=PN/6226673

Document Type: Patent
Record Type: Abstract
Language: English
File Segment: ANTE: Abstracts in New Technologies and Engineering

Abstract:
This invention is to autonomously control reduction of wide-area traffic by sharing the same stream among nodes while avoiding distribution route localization due to **route selection** at the network level, and efficiently distribute a real-time data stream maintaining a high quality. In a real-time data distribution control system for distributing real-time data such as image or audio data using a **network**, **node devices** having data transmission/reception/relay means are put into groups. When the real-time data

distribution route is to be selected among the node groups, an upper node group is selected in units of transmission sources.

Descriptors: Real time; Networks; Computer networks; Images; Routing (telecommunications); Streams; Data transmission; **Position (location)**; **Computer** programs; **Route selection**; Reduction; Traffic flow; Inventions; Traffic engineering; Control systems; Relay; Audio data; Localization
Identifiers:

21/7/45 (Item 19 from file: 60)
DIALOG(R)File 60: ANTE: Abstracts in New Tech & Engineer

0000475014 IP Accession No: 2008157447
Communications network having adaptive network link optimization using wireless terrain awareness and method for use therein

Chuprun, Jeffrey Scott; Bergstrom, Chad S; Tarver, Byron; Beaudry, Bennett
, USA
Publisher Url: http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u =/netaht ml/PTO/search-adv.htm&r=1&p=1&f=G&l=50&d=PTXT&S1=61 15580.PN.&OS=pn/6115580&RS=PN/6115580

Document Type: Patent
Record Type: Abstract
Language: English
File Segment: ANTE: Abstracts in New Technologies and Engineering

Abstract:
A communications network (10) having a plurality of wireless nodes (12-28) distributed within a region of interest makes routing decisions based on terrain information for the region of interest. A link quality determination unit (54) determines the quality of individual **node**-to-**node** links within the **network** (10), based on the **location** of the **nodes** (12-28) and the terrain about the nodes (12-28). A **path selection** unit 58 then **determines** an optimal **path** through the network 10 based on the link quality information. In one embodiment, communications corridors (102) are defined as preferred subpaths within a **network** for use in connecting remote **nodes**.